

IN THE CLAIMS

1. (Previously Presented) A process for the preparation of high surface area activated carbon from coconut shells which comprises cleaning the coconut shells, drying the cleaned coconut shells at a temperature within a first range, crushing the dried coconut shells, sieving the crushed coconut shells through 100-400 mesh to obtain uniform sized coconut shell powder, treating the shell powder with an activating agent, drying the treated coconut shell powder, carbonizing the powder in an inert atmosphere at a temperature within a second range of 300-400° for 3-6 h, cooling the carbonized powder to room temperature, activating the carbonized powder in an inert or oxidizing gas at a temperature within a third range of 600-700°C, said activating being carried out without steam to form the activated carbon powder with uniform pore size, cooling the activated carbon powder to room temperature, removing excess activating agent, washing with water to bring the powder to neutral pH and drying the washed powder to obtain the high surface area activated carbon with a nitrogen adsorption isotherm at 77 K, a BET surface area in the range 1500-2000 m²/g with average pore diameter 17-21 Å, layer and a capacitance in the range of 10-180 F/g.

2. (Previously Presented) A process as claimed in claim 1 wherein the activating agent is selected from the group consisting of 250 mM –2M aqueous solutions of an alkali metal hydroxide, an alkali metal hydride, a carbonate, a chloride, a sulfide, a thiocyanate of a transition metal and an inorganic acid.

3. (Previously Presented) A process as claimed in claim 2, wherein the chloride is zinc chloride.
4. (Previously Presented) A process as claimed in claim 2, wherein the alkali metal hydroxide is potassium hydroxide.
5. (Previously Presented) A process as claimed in claim 1, wherein the inert gas is selected from the group consisting of nitrogen and argon.
6. (Previously Presented) A process as claimed in claim 1, wherein the carbonization is carried out at the second range in an inert atmosphere using different heating rates ranging from 5-20 °C /min.
7. (Previously Presented) A process as claimed in claim 1, wherein the activation is carried out in a dynamic flow of the inert or oxidizing gas at a flow rate of 20-200 ml/min and at a heating rate of 5-20 °C/min.
8. (Previously Presented) A process as claimed in claim 1, wherein the coconut shells are first cleaned mechanically to remove fibrous parts therefrom followed by a thorough rinsing with distilled water.

9. (Previously Presented) A process as claimed in claim 1, wherein the first range is 110-115°C and the cleaned coconut shell is dried at a temperature in the first range for 12-20 h.

10. (Previously Presented) A process as claimed in claim 1, wherein the crushed coconut shell powder is sieved through 100-400 mesh to obtain uniform sized particles.

11. (Previously Presented) A process as claimed in claim 1, wherein the first range is 100-200°C and the treated coconut shell powder is dried at a temperature in the first range for a period of 12-22 h.

12. (Previously Presented) A process as claimed in claim 1, wherein the excess activating agent is removed by treating with dilute hydrochloric acid followed by the washing with water.

13. (Cancelled)

14. (Previously Presented) A process for the preparation of high surface area activated carbon from coconut shells consisting essentially of: cleaning the coconut shells, drying the cleaned coconut shells at a temperature within a first range, crushing the dried coconut shells, sieving the crushed coconut shells through 100-400 mesh to obtain uniform sized coconut shell powder, treating the shell powder with an activating agent, drying the treated coconut

shell powder, carbonizing the powder in an inert atmosphere at a temperature within a second range of 300-400°C for 3-6 h, cooling the carbonized powder to room temperature, activating the carbonized powder in an inert or oxidizing gas at a temperature within a third range of 600-700°C, said activating being carried out for a time effective to form the activated carbon powder with uniform pore size; cooling the activated carbon powder to room temperature, removing excess of activating agent, washing with water to bring the powder to neutral pH and drying the washed powder to obtain the high surface area activated carbon with a nitrogen adsorption isotherm at 77 K, a BET surface area in the range 1500-2000 m²/g with average pore diameter 17-21 Å, layer and a capacitance in the range of 10-180 F/g.

15. (Previously Presented) A process as claimed in claim 14, wherein the activating agent is selected from the group consisting of 250 mM –2M aqueous solutions of an alkali metal hydroxide, an alkali metal hydride, a carbonate, a chloride, a sulfide, a thiocyanate of a transition metal and an inorganic acid.

16. (Previously Presented) A process as claimed in claim 15, wherein the chloride is zinc chloride.

17. (Previously Presented) A process as claimed in claim 15, wherein the alkali metal hydroxide is potassium hydroxide.

18. (Previously Presented) A process as claimed in claim 14, wherein the inert gas is selected from the group consisting of nitrogen and argon.

19. (Previously Presented) A process as claimed in claim 14, wherein the carbonization is carried out at the second for 3-6 h, in the inert atmosphere and using different heating rates ranging from 5-20 °C /min.

20. (Previously Presented) A process as claimed in claim 14, wherein the activation is carried out in a dynamic flow of the inert or oxidizing gas at a flow rate of 20-200 ml/min and at a heating rate of 5-20 °C/min.

21. (Previously Presented) A process as claimed in claim 14, wherein the coconut shells are first cleaned mechanically to remove fibrous parts therefrom followed by a thorough rinsing with distilled water.

22. (Previously Presented) A process as claimed in claim 1, wherein the first range is 110-115 °C and the cleaned coconut shell is dried at a temperature in the first range for 12-20 h.

23. (New) The process as claimed in claim 1, wherein the activating of the carbon powder is performed in an atmosphere consisting of an inert gas for a time effective to form the activated carbon powder with uniform pore size.